

#5

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/501, 8/4
Source: PT/10
Date Processed by STIC: 9/6/05

ENTERED



PCT

RAW SEQUENCE LISTING

DATE: 09/06/2005

PATENT APPLICATION: US/10/501,814

TIME: 11:28:50

Input Set : A:\US10501814-seq list.txt

Output Set: N:\CRF4\09062005\J501814.raw

```

3 <110> APPLICANT: Evotec NeuroSciences GmbH
5 <120> TITLE OF INVENTION: Diagnostic and therapeutic use of a voltage-gated ion
6   channel for neurodegenerative diseases
8 <130> FILE REFERENCE: P67564US1
C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/501,814
C--> 11 <141> CURRENT FILING DATE: 2004-07-19
13 <160> NUMBER OF SEQ ID NOS: 15
15 <170> SOFTWARE: PatentIn Ver. 2.1
17 <210> SEQ ID NO: 1
18 <211> LENGTH: 272
19 <212> TYPE: DNA
20 <213> ORGANISM: Artificial Sequence
22 <220> FEATURE:
23 <223> OTHER INFORMATION: Description of Artificial Sequence: cDNA fragment
24   of the human SCN2A gene
26 <400> SEQUENCE: 1
27 aattaaggtt ggaagaataa aaagcaagaa gctcttcctt gtttgctgca acctattgct 60
28 taatgacatg aagaatgagg tcttggtaga acaatttgct tcactttacc actgatatat 120
29 ggcttcccat attagacttc tgaacagggg aaggaataag atacagcagc ataggcaaga 180
30 taaacatgca gcagtgcacg cttcaaacta taatggaacc aattacatca tattacctgt 240
31 tggagcttg caaactatac ttactggggt ac 272
34 <210> SEQ ID NO: 2
35 <211> LENGTH: 8292
36 <212> TYPE: DNA
37 <213> ORGANISM: Artificial Sequence
39 <220> FEATURE:
40 <223> OTHER INFORMATION: Description of Artificial Sequence: cDNA of the
41   human SCN2A gene
43 <400> SEQUENCE: 2
44 cactttctta tgcaaggagc taaacagtga ttaaaggagc aggatgaaaa gatggcacag 60
45 tcagtgtggtg taccgccagg acctgacagc ttccgcttct ttaccagggg atcccttgct 120
46 gctattgaac aacgcattgc agaagagaaa gctaagagac ccaaacagga acgcaaggat 180
47 gaggatgatg aaaatggccc aaagccaaac agtgacttgg aagcaggaaa atctcttcca 240
48 tttatttatg gagacattcc tccagagatg gtgtcagtgc ccctggagga tctggacccc 300
49 tactatatca ataagaaaac gtttatagta ttgaataaag ggaaagcaat ctctcgattc 360
50 agtgccaccc ctgcccttta cattttaact cccttcaacc ctattagaaa attagctatt 420
51 aagatttttg tacattcttt attcaatatg ctcatattgt gcacgattct taccaactgt 480
52 gtattttatg ccatgagtaa cctccagac tggacaaaga atgtggagta tacctttaca 540
53 ggaatttata cttttgaatc acttattaaa atacttgcaa ggggcttttg tttagaagat 600
54 ttcacatttt tacgggatcc atggaattgg ttggatttca cagtcattac tttgcatat 660
55 gtgacagagt ttgtggacct gggcaatgtc tcagcgttga gaacattcag agttctccga 720
56 gcattgaaaa caatttcagt cattccaggc ctgaagacca ttgtgggggc cctgatccag 780
57 tcagtgaaga agctttctga tgtcatgac ttgactgtgt tctgtctaag cgtgtttgcg 840

```

RAW SEQUENCE LISTING

DATE: 09/06/2005

PATENT APPLICATION: US/10/501,814

TIME: 11:28:50

Input Set : A:\US10501814-seq list.txt

Output Set: N:\CRF4\09062005\J501814.raw

```

58 ctaataggat tgcagttggt catgggcaac ctacgaaata aatgtttgca atggcctcca 900
59 gataattctt cctttgaaat aaatatcact tccttcttta acaattcatt ggatgggaat 960
60 ggtactactt tcaataggac agtgagcata tttaactggg atgaatatat tgaggataaa 1020
61 agtcactttt attttttaga ggggcaaaat gatgctctgc tttgtggcaa cagctcagat 1080
62 gcaggccagt gtcctgaagg atacatctgt gtgaaggctg gtagaaaccc caactatggc 1140
63 tacacgagct ttgacacctt tagttgggccc tttttgtcct tatttcgtct catgactcaa 1200
64 gacttctggg aaaaccttta tcaactgaca ctacgtgctg ctgggaaaac gtacatgata 1260
65 ttttttgtgc tggtcatttt cttgggctca ttctatctaa taaatttgat cttggctgtg 1320
66 gtggccatgg cctatgagga acagaatcag gccacattgg aagaggctga acagaaggaa 1380
67 gctgaatttc agcagatgct cgaacagttg aaaaagcaac aagaagaagc tcaggcggca 1440
68 gctgcagccg catctgctga atcaagagac ttcagtgggt ctggtgggat aggagttttt 1500
69 tcagagagtt cttcagtagc atctaagttg agctccaaaa gtgaaaaaga gctgaaaaac 1560
70 agaagaaaaga aaaagaaaaca gaaagaacag tctggagaag aagagaaaaa tgacagagtc 1620
71 cgaaaatcgg aatctgaaga cagcataaga agaaaagggt tccgtttttc cttggaagga 1680
72 agtaggctga catatgaaaa gagattttct tctccacacc agtccttact gagcatccgt 1740
73 ggctcccttt tctctccaag acgcaacagt agggcgagcc ttttcagctt cagaggctga 1800
74 gcaaaggaca ttggctctga gaatgacttt gctgatgatg agcacagcac ctttgaggac 1860
75 aatgacagcc gaagagactc tctgttcgtg ccgcacagac atggagaacg gcgccacagc 1920
76 aatgtcagcc agggccagccg tgcctccagg gtgctcccca tctgcccatt gaatgggaag 1980
77 atgcatagcg ctgtggactg caatgggtgtg gtctccctgg tcggggggccc ttctacctc 2040
78 acatctgctg ggcagctcct accagagggc acaactactg aaacagaaat aagaaagaga 2100
79 cgggtccagtt cttatcatgt ttccatggat ttattggaag atcctacatc aaggcaaaga 2160
80 gcaatgagta tagccagtat tttgaccaac accatggaag aacttgaaga atccagacag 2220
81 aaatgcccac catgctggta taaatttgct aatatgtgtt tgatttggga ctggttgtaa 2280
82 ccatggttaa aggtgaaaca ccttgtcaac ctggttgtaa tggaccatt tgttgacctg 2340
83 gccatcacca tctgcattgt cttaaataca ctcttcatgg ctatggagca ctatcccatg 2400
84 acggagcagt tcagcagtgat actgtctgtt ggaaacctgg tcttcacagg gatcttcaca 2460
85 gcagaaatgt ttctcaagat aattgccatt gatccatatt attactttca agaaggctgg 2520
86 aatatttttg atggttttat tgtgagcctt agtttaattg aacttgggtt ggcaaatgtg 2580
87 gaaggatgtc cagttctccg atcattccgg ctgctccgag ttttcaagtt ggcaaatctc 2640
88 tggccaactc taaatatgct aattaagatc attggcaatt ctgtgggggc tctaggaaac 2700
89 ctcaccttgg tattggccat catcgtcttc atttttgtg tggtcggcat gcagctcttt 2760
90 ggtaagagct acaaagaatg tgtctgcaag atttccaatg atttgtgaact ccacagctgg 2820
91 cacatgcatg actttttcca ctcttctctg atcgtgttcc gcgtgctgtg tggagagtgg 2880
92 atagagacca tgtgggactg tatggaggtc gctggccaaa ccatgtgctt tactgtcttc 2940
93 atgatggtca tgggtgattgg aaatctagtg gttctgaacc tcttcttggc cttgcttttg 3000
94 agttccttca gttctgacaa tcttgctgcc actgatgatg ataacgaaat gaataatctc 3060
95 cagattgctg tgggaaggat gcagaaagga atcgattttg ttaaaagaaa aatacgtgaa 3120
96 tttattcaga aagcctttgt taggaagcag aaagcttttag atgaaattaa accgcttgaa 3180
97 gatctaaata ataaaaaga cagctgtatt tccaaccata ccacataga aataggcaaa 3240
98 gacctcaatt atctcaaaga cggaaatgga actactagtg gcataggcag cagtgtagaa 3300
99 aaatatgtcg tggatgaaag tgattacatg tcatttataa acaaccctag cctcactgtg 3360
100 acagtaccaa ttgctgttgg agaactctgac tttgaaaatt taaatactga agaattcagc 3420
101 agcgagtcag atatggagga aagcaaagag aagctaaatg caactagttc atctgaaggc 3480
102 agcacggttg atattggagc tcccgcggag ggagaacagc ctgagggtga acctgaggaa 3540
103 tcccttgaac ctgaagcctg ttttacagaa gactgtgtac ggaagttcaa gtgttgtcag 3600
104 ataagcatag aagaaggcaa agggaaactc tggtggaatt tgaggaaaac atgctataag 3660
105 atagtggagc acaattgggt cgaaaccttc attgtcttca tgattctgct gagcagtggg 3720
106 gctctggcct ttgaagatat atacattgag cagcgaaaaa ccattaagac catgttagaa 3780

```

RAW SEQUENCE LISTING

DATE: 09/06/2005

PATENT APPLICATION: US/10/501,814

TIME: 11:28:50

Input Set : A:\US10501814-seq list.txt

Output Set: N:\CRF4\09062005\J501814.raw

```

107 tatgctgaca aggtttttcac ttacatatc attctggaaa tgctgctaaa gtgggttgca 3840
108 tatgggttttc aagtgtatatt taccaatgcc tgggtgctggc tagacttcct gattgttgat 3900
109 gtctcactgg ttagcttaac tgcaaatgcc ttgggttact cagaacttgg tgccatcaaa 3960
110 tccctcagaa cactaagagc tctgaggcca ctgagagctt tgtcccggtt tgaaggaatg 4020
111 aggggttggtg taaatgctct tttaggagcc attccatcta tcatgaatgt acttctgggtt 4080
112 tgtctgatct tttggctaata attcagtatc atgggagtga atctctttgc tggcaagttt 4140
113 taccattgta ttaattacac cactggagag atgtttgatg taagcgtggg caacaactac 4200
114 agtgagtgca aagctctcat tgagagcaat caaactgcc aagtgaaaaa tgtgaaagta 4260
115 aactttgata acgtaggact tggatatctg tctctacttc aagtagccac gtttaaggga 4320
116 tggatggata ttatgtatgc agctgttgat tcacgaaatg tagaattaca acccaagtat 4380
117 gaagacaacc tgtacatgta tctttatatt gtcatcttta ttatttttgg ttcattcttt 4440
118 accttgaatc ttttcattgg tgtcatcata gataacttca accaacagaa aaagaagttt 4500
119 ggaggtcaag acatttttat gagagaagaa cataagaaat actacaatgc aatgaaaaaa 4560
120 ctgggttcaa agaaaccaca aaaaccata cctcgacctg ctaacaaatt ccaaggaatg 4620
121 gtcttttgatt ttgtaaccaa acaagtcttt gatatcagca tcatgatcct catctgcctt 4680
122 aacatggtca ccatgatggg ggaaaccgat gaccagagtc aagaaatgac aaacattctg 4740
123 tactggatta atctgggtgt tattgttctg ttcactggag aatgtgtgct gaaactgatc 4800
124 tctcttcgtt actactatct cactattgga tggaaatatt ttgattttgt ggtggtcatt 4860
125 ctctccattg taggaatgtt tctggctgaa ctgatagaaa agtattttgt gtcccctacc 4920
126 ctgttccgag tgatccgtct tgccaggatt ggccgaatcc tacgwtgat caaaggagca 4980
127 aaggggatcc gcacgctgct ctttgccttg atgatgtccc ttctgctgtt gtttaacatc 5040
128 ggcctccttc ttttcctggg catgttcatc tacgccatct ttgggatgtc caattttgcc 5100
129 tatgttaaga gggaagtgg gatcgatgac atgttcaact ttgagacctt tggcaacagc 5160
130 atgatctgcc tgttccaaat tacaacctct gctggctggg atggattgct agcacctatt 5220
131 cttaatagtg gacctccaga ctgtgacct gacaaagatc accctggaag ctgagttaaa 5280
132 ggagactgtg ggaaccatc tgttgggatt ttcttttttg tcagttacat catcatatcc 5340
133 ttcttggttg tggatgaacat gtacatcgcg gtcatcctgg agaacttcag tgttgctact 5400
134 gaagaaagtg cagagcctct gagtgaggat gactttgaga tgttctatga ggtttgggag 5460
135 aagtttgatc ccgatcgcac ccagtttata gactttgcca aactttctga ttttgagat 5520
136 gccctggatc ctccctctct catagcaaaa ccaacaaaag tccagctcat tgccatggat 5580
137 ctgcccattg tgagtgggta ccggatccac tgtcttgaca tcttatttgc ttttacaaag 5640
138 cgtgttttgg gtgagagtgg agagatggat gcccttcgaa tacagatgga agagcgattc 5700
139 atggcatcaa accctccaa agtctcttat gagccatta cgaccagtt gaaacgcaa 5760
140 caagaggagg tgtctgctat tattatccag agggcttaca gacgtacct cttgaagcaa 5820
141 aaagttaaaa aggtatcaag tatatacaag aaagacaaag gcaaagaatg tgatggaaca 5880
142 cccatcaaag aagatactct cattgataaa ctgaatgaga attcaactcc agagaaaacc 5940
143 gatatgacgc ctccaccac gtctccacc tcgtatgata gtgtgaccaa accagaaaaa 6000
144 gaaaaatttg aaaaagacaa atcagaaaag gaagacaaag ggaaagatat cagggaaagt 6060
145 aaaaagttaa aagaaaccaa gaattttcca ttttgtgatc aattgtttac agcccgtgat 6120
146 ggtgatgtgt ttgtgtcaac aggactccca caggaggtct atgccaaact gactgttttt 6180
147 acaaatgtat acttaagggtc agtgctata acaagacaga gacctctggg cagcaactg 6240
148 gaactcagta aactggagaa atagtatcga tgggaggttt ctattttcac aaccagctga 6300
149 cactgctgaa gagcagaggc gtaatggcta ctacagcgt aggaaccaat ttaaaggggg 6360
150 gagggaggtt aaatttttat gtaaattcaa catgtgacac ttgataatag taattgtcac 6420
151 cagtgtttat gttttaactg ccacacctgc catattttta caaaacgtgt gctgtgaatt 6480
152 tatcattttt ctttttaatt cacaggttgt ttactattat atgtgactat tttgtaaat 6540
153 ggggttgtgt ttggggagag ggattaaagg gagggaaatc tacatttctc tattgtattg 6600
154 tataactgga tatattttta atggaggcat gctgcaatcc tcattcacac ataaaaaat 6660
155 cacatcacia aagggagag tttacttctt gtttcaggat gtttttagat ttttgagggtg 6720

```

RAW SEQUENCE LISTING

DATE: 09/06/2005

PATENT APPLICATION: US/10/501,814

TIME: 11:28:50

Input Set : A:\US10501814-seq list.txt

Output Set: N:\CRF4\09062005\J501814.raw

```

156 cttaaatagc tattcgtatt ttttaagggtgt ctcacccaga aaaaatttaa tgtgcctgta 6780
157 aatgttccat agaatacaca gcattaaaga gttgttttat ttttacataa cccattaaat 6840
158 gtacatgtat atatgtatat atgtatatgt gcgtgtatat acatatatat gtatacacac 6900
159 atgcacacac agagatatata acataccatt acattgtcat tcacagtccc agcagcatga 6960
160 ctatcacatt ttgataagt gtcctttggc ataaaataaa aatatcctat cagtcctttc 7020
161 taagaagcct gaattgacca aaaaacatcc ccaccaccac tttataaagt tgattctgct 7080
162 ttatcctgca gtattgttta gccatcttct gctcttggtta aggttgacat agtatatgtc 7140
163 aatttaaaaa ataaaagtct gctttgtaaa tagtaatttt acccagtggt gcatgtttga 7200
164 gcaaacaaaa atgatgattt aagcacacta cttattgcat caaatatgta ccacagtaag 7260
165 tatagtttgc aagctttcaa caggtaatat gatgtaattg gttccattat agtttgaagc 7320
166 tgtcactgct gcatgtttat cttgcctatg ctgctgtatc ttattccttc cactgttcag 7380
167 aagtctaata tgggaagcca tatatcagt gtaaagtga gcaaattggt ctaccaagac 7440
168 ctcatcttcc atgtcattaa gcaataggtt gcagcaaaaca aggaagagct tcttgctttt 7500
169 tattcttcca accttaattg aacactcaat gatgaaaagc ccgactgtac aaacatgttg 7560
170 caagctgctt aaatctgttt aaaatatatg gttagagttt tctaagaaaa tataaatact 7620
171 gtaaaaaagt catttttattt tatttttcag cttttgtac gtaaaatgag aaattaaaag 7680
172 tatcttcagg tggatgtcac agtcactatt gttagtttct gttcctagca cttttaaatt 7740
173 gaagcacttc acaaaaataag aagcaaggac taggatgcag tgtaggtttc tgctttttta 7800
174 ttagtactgt aaacttgcac acatttcaat gtgaaacaaa tctcaaactg agttcaatgt 7860
175 ttatttgcct tcaatagtaa tgcttatca ttgaaagagg cttaaagaaa aaaaaaatca 7920
176 gctgatactc ttggcattgc ttgaatccaa tgtttccacc tagtcttttt attcagtaat 7980
177 catcagctct ttccaatggt tgtttacaca gatagatctt attgacccat atggcactag 8040
178 aactgtatca gatataatat gggatcccag ctttttttcc tctcccacaa aaccaggtag 8100
179 tgaagtata ttaccagtta cagcaaaaata ctttgtgttt cacaagcaac aataaatgta 8160
180 gattctttat actgaagcta ttgacttgta gtgtgttggt gaaatgcatt caggaaaatg 8220
181 ctgttaccat aaagaacggt aaaccacatt acaatcaagc caaaagaata aaggtttcgc 8280
182 ttttgttttt gt 8292

```

185 <210> SEQ ID NO: 3

186 <211> LENGTH: 2005

187 <212> TYPE: PRT

188 <213> ORGANISM: Homo sapiens

190 <400> SEQUENCE: 3

```

191 Met Ala Gln Ser Val Leu Val Pro Pro Gly Pro Asp Ser Phe Arg Phe
192   1           5           10           15
194 Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
195           20           25           30
197 Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
198           35           40           45
200 Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
201           50           55           60
203 Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
204   65           70           75           80
206 Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
207           85           90           95
209 Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
210           100          105          110
212 Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
213           115          120          125
215 Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val

```

RAW SEQUENCE LISTING

DATE: 09/06/2005

PATENT APPLICATION: US/10/501,814

TIME: 11:28:50

Input Set : A:\US10501814-seq list.txt

Output Set: N:\CRF4\09062005\J501814.raw

```

216      130      135      140
218 Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
219 145      150      155      160
221 Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
222      165      170      175
224 Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
225      180      185      190
227 Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
228      195      200      205
230 Asp Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
231      210      215      220
233 Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala
234 225      230      235      240
236 Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
237      245      250      255
239 Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
240      260      265      270
242 Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
243      275      280      285
245 Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
246      290      295      300
248 Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile
249 305      310      315      320
251 Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
252      325      330      335
254 Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
255      340      345      350
257 Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
258      355      360      365
260 Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
261      370      375      380
263 Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
264 385      390      395      400
266 Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
267      405      410      415
269 Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
270      420      425      430
272 Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
273      435      440      445
275 Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
276      450      455      460
278 Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
279 465      470      475      480
281 Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
282      485      490      495
284 Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
285      500      505      510
287 Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
288      515      520      525

```

VERIFICATION SUMMARY

DATE: 09/06/2005

PATENT APPLICATION: US/10/501,814

TIME: 11:28:51

Input Set : A:\US10501814-seq list.txt

Output Set: N:\CRF4\09062005\J501814.raw

L:10 M:270 C: Current Application Number differs, Replaced Current Application Number
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date